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The star is not far from the Antapex of the Sun's motion and the observed velocity of the system is practically that due to the solar motion. The density is not improbably low like that of the eclipsing systems. The parallax is unknown, but on the basis of PLUMMER's hypothetical parallaxes for Class A stars, v_4 *Eridani* has a parallax of 0.″03 and is one of a star group of similar spectral class and similar motions. On the basis of a probable orbital inclination, low density, and the hypothetical parallax, the physical system of v_4 *Eridani* may be thus described: The component masses are somewhat less massive but slightly larger than the Sun, having an intrinsic luminosity at least eight times that of the Sun and a total luminosity of probably not less than thirty times that of the Sun.

The principal elements are:—

$P = 5.010$ days
$v = +17.8^{\text{km}}$
$\left.\begin{matrix} m_2 \\ m_1 \end{matrix}\right\} = 0.9832$
$e = 0.01 \pm$
$K_1 = 63.8^{\text{km}}$
$k_2 = 64.8^{\text{km}}$
$(a_1 + a_2) \sin i = 8800000^{\text{km}}$

This paper has been published in full in Lick Observatory Bulletin, No. 274.

G. F. PADDOCK.

NEW LIGHT ELEMENTS AND REVISED ORBIT OF UZ CYGNI.

The publication, in the second part of Volume 69 of the *Harvard Annals,* of more than 3000 observations of eclipsing variable stars permits the revision of many of the orbits published by the writer a year ago.[1] The observations, which were made during the years 1903 to 1912 by Professor WENDELL with a sliding-prism polarizing photometer, represent the best visual photometric work in existence, the probable error of a single set of measures remaining consistently but a little greater than ± 0.03 mag. Some points of general interest to variable star workers arise in the course of the revisions and are suitable for brief mention in these notes; the detailed revision will be published elsewhere.

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[1] *Contributions from the Princeton University Observatory,* No. 3.

The star UZ *Cygni* is out of the ordinary in the length of its period, its rather low density for an A-type star (0.01 in terms of the Sun), and in its probably very great distance from the solar system (hypothetical $\pi = 0''.0004$). Each eclipse lasts 2.5 days and the small bright star is totally obscured for 24 hours.

The new series of observations can not be satisfied by the light elements due to PICKERING, nor by the closely similar formula derived by HARTWIG. The following revised elements represent them satisfactorily, and also the earlier Harvard series (Vol. **69**, part I):

$$\text{Min.} = \text{J. D. } 2415868.930 + 31^{d}.308 \cdot \text{E.}$$

HARTWIG announced in 1904 a secondary minimum of four-tenths of a magnitude[2] and gives annually an ephemeris for it in the *Katalog*. As the range of variation at primary is 1.86 mag. (revised value), such a secondary is impossible on the eclipse hypothesis, which permits one of at most but a few hundredths of a magnitude. WENDELL'S observations, which are nearly contemporary with HARTWIG'S announcement, confirm the absence of an appreciable secondary, which, for a circular orbit, should come at phase 15.7 days. The normal magnitudes at phases 13.2, 14.7, 15.4, and 16.7 days are 10.24, 10.33, 10.29, and 10.28, respectively, while 15 other observations give for the mean maximum magnitude 10.29 ± 0.02.

The revised photometric orbit differs very little from that originally computed, except that the inclination is 90° for both "uniform" and "darkened" solutions, and the "uniform" densities are slightly increased. The density of the fainter component is less than one-thousandth that of the Sun. Its spectrum is unknown, but an attempt will be made at Mount Wilson to determine its color index.

HARLOW SHAPLEY.

ABSOLUTE MAGNITUDE AND COLOR OF A VERY FAINT STAR.

In the preceding number of these *Publications* (December, 1915), Dr. VAN MAANEN announces the discovery of a faint, distant companion to the large proper motion star Pi. $2^{h}123$. The coincidence of the direction and amount of the proper

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[2] *Astronomische Nachrichten*, **165**, 121, 1904.